

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION**

MAXELL, LTD.,

Plaintiff,

v.

CORETRONIC CORP., OPTOMA CORP.,

Defendants.

Case No. 5:24-CV-00088-RWS-JBB

JURY TRIAL DEMANDED

**PLAINTIFF MAXELL, LTD.'S
OPENING CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Defendants' claim construction tactics follow the same unimaginative approach of countless other accused infringers: narrow the claims' scope using any available argument, no matter how tenuous.

Here, Defendants have selected 35 U.S.C. § 112(f) for that purpose, employing it for seven of the ten terms in dispute. But Defendants have strayed from a proper means-plus-function analysis in a number of ways. For example, rather than ask whether the disputed language would connote sufficiently definite structure to a person of ordinary skill, Defendants have robotically searched for any use of the word *unit* and, for each such instance, assumed that § 112(f) is a foregone conclusion. Elsewhere, they ignore ample case law on the structural significance of *system* and even advance the incredible argument that *mirror* somehow gives rise to the application of § 112(f). Defendants also improperly pull their proposed functions from the specifications (or thin air), ignoring the language of the claims. However, § 112(f) is not a proper vehicle to import limitations from the specification into the claims; it exists to set reasonable bounds on purely functional claiming. Defendants' misuse of § 112(f) should be rejected.

If a disputed term is not subject to § 112(f), according to Defendants, it is indefinite. But Defendants offer no expert testimony in support of these arguments, and they ignore the patents' detailed descriptions and figures that plainly resolve whatever ambiguity Defendants can conjure.

While Defendants take a backwards approach to claim construction—first concocting a non-infringement or invalidity argument and then struggling to justify it afterward—Plaintiff Maxell, Ltd. takes a different approach. Maxell's proposed constructions flow from the natural reading of the claims, draw upon the plain-meaning descriptions of the terms in the specifications, and (where useful) align with the extrinsic evidence, including the unrebutted expert testimony of Dr. Michael Lebby. Defendants' proposals should be rejected. Maxell's should be adopted.

II. LEGAL STANDARDS

The absence of *means* creates a rebuttable presumption that the term conveys sufficiently definite structure and is not subject to § 112(f) / pre-AIA § 112, ¶ 6. *See MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019). To overcome this presumption, the challenger must show how “the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that action.” *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015).

Means-plus-function interpretation does not apply when the disputed term “connotes sufficiently definite structure.” *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1365 (Fed. Cir. 2022). “What is important is . . . that the term, as the name for structure, has a reasonably well understood meaning in the art.” *Id.* at 1365 (citing *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996)).

III. ARGUMENT

A. The '988 Patent

1. Background of the '988 Patent

At the time of the invention of the '988 Patent, which claims priority to November 28, 2003, it was well-known that contemporaneous projection optical unit technology had various disadvantages. For example, certain prior solutions to realize a more compact projection unit required lens types (*e.g.*, asymmetrical lenses) that were difficult to manufacture. '988 Patent at 1:32-53. As another example, achieving wider-angled imaging caused difficulties with focusing performance. *Id.* at 1:58-67.

Thus, there was a need to create a more compact projection display apparatus that would ensure “wider-angle imaging, higher focusing performance, higher magnifications, and longer back-focusing.” *Id.* at 2:26-30. Additionally, it was desirable to minimize development investment

by “partially modifying standard components without redesigning and redeveloping all illumination optics or the projection optical unit.” *Id.* at 2:30-35.

The ’988 Patent was designed to help create more compact and versatile projection display apparatuses without a wholesale redesign of the entire device. *Id.* at 2:26-39. To achieve this, the ’988 Patent discloses a specialized configuration with particular positioning and properties for a first projection optical unit and a second projection optical unit. *Id.* at 2:40-52.

For example, in certain embodiments, the second projection optical unit is positioned such that it further enlarges a first enlarged image obtained by the first projection optical unit. *Id.* Further, the ’988 Patent discloses a configuration in which the first projection optical unit includes an aperture stop that defines an F-value of an entire projection optical unit that includes the first projection optical unit and the second projection optical unit. *Id.* at 26:59-27:3.

This configuration allows for changes in optical properties that “provid[e] an advantage in implementing very-wide-angle imaging” and provide images that “does not affect the on-screen enlarged image, even if dirt sticks to the field lens group.” *Id.* at 2:61-3:10. The wide-angle-imaging capabilities allow for a more compact projection display apparatus and greater versatility in placement of the projection display apparatus for viewing purposes because the “apparatus is not restricted by its installation location when used ... in a small room.” *Id.* at 3:49-54.

2. Level of Ordinary Skill in the Art for the ’988 Patent

A person of ordinary skill in the art at the time the ’988 Patent was filed would have had a Bachelor of Science degree in Electrical Engineering, Physics, Optics, or an equivalent degree, and at least one year of experience working in the field of optical engineering, optical design, or a related field. Additional education and/or experience may provide a substitute for one of the qualifications of a person of ordinary skill in the art.

3. Disputed Terms in the '988 Patent: “*projection optical unit*”; a *first projection optical unit*”; a *second projection optical unit*”

Maxell’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, for example, an assembly of lenses, mirrors, and/or other optical elements to form an enlarged image.	Governed by pre-AIA 35 U.S.C. § 112, ¶ 6 <u>Function</u> : to form an enlarged image <u>Structure</u> : a lens group having a positive refractive power

The parties dispute whether the term “projection optical unit”—a term familiar to those of skill in the relevant art—should be interpreted as a means-plus-function limitation. While the plain language of the claims themselves connote sufficiently definite structure, Defendants make too much of the use of *unit* in these phrases.

(1) “Projection optical unit” is not a means-plus-function limitation.

“Projection optical unit” should not be interpreted as a means-plus-function limitation. The lack of the word *means* in the '988 Patent establishes that there is no presumption that “projection optical unit” is subject to means-plus-function interpretation. *See Williamson*, 792 F.3d at 1348; *see also Canon, Inc. v. TCL Elecs. Holdings Ltd.*, No. 2:18-CV-546, 2020 WL 2098197, at *31 (E.D. Tex. May 1, 2020) (stating that words with *unit* must be viewed in context with modifier preceding the word *unit*, which can “impart[] structural significance to the term”).

The claims themselves connote sufficiently definite structure. For example, the claims recite that the first and second “projection optical units” have “positive refractive power,” which is a property of a specific class of structures (*i.e.*, an assembly of lenses, mirrors, or other optical elements). This recitation thus “add[s] limitations that either describe particular structural features or flesh[es] out whether the term has a particular structural meaning.” *See Diebold Nixdorf, Inc. v. Int’l Trade Comm’n*, 899 F.3d 1291, 1298 (Fed. Cir. 2018).

The dependent claims further show sufficiently definite structure for these optical units.

For example, dependent claims 5 and 6 recite that the “projection optical unit” of claim 1 includes a “lens element.” ’988 Patent at 29:5-12. A lens element is “a particular structural feature” and “flesh[es] out that [‘projection optical unit’] has a particular structural meaning.” *See Diebold*, 899 F.3d at 1298. Therefore, the claims convey to a person of ordinary skill in the art a specific class of structures (*e.g.*, an assembly of lenses, mirrors, or other optical elements) that is used to form an enlarged image, and the term should not be interpreted as a means-plus-function term.

The specification confirms this. It provides examples of “projection optical units” and explains that they include optical elements such as lenses and mirrors:

Additionally, the projection optical unit described in Patent document 3 includes a first refractive lens system that has positive power, a second refractive lens system that has negative power, and an optical path folding mirror. Since at least two lenses in the second refractive lens system that has negative power are decentered with a difference in rotational symmetry, there is the manufacturing-related problem in which position accuracy of each lens is difficult to achieve.

’988 Patent at 1:46-53 (emphasis added); *see Williamson*, 792 F.3d at 1351 (specification can impart structural significance to a term). As this description makes plain, a person of ordinary skill in the art would understand that the “projection optical unit” refers to a specific class of structures (*e.g.*, optical elements including lenses and mirrors), as well as different refractive powers (*e.g.*, positive or negative). ’988 Patent at 1:46-53. Further, the specification details embodiments that include a prism or a mirror as part of a “projection optical unit.” ’988 Patent at 3:11-48 (describing (a) an embodiment with a mirror as part of the “projection optical unit” and (b) an embodiment with a prism as part of the “projection optical unit”).

Therefore, “projection optical unit” (and the other terms like it) are not means-plus-function limitations. Rather, a plain-meaning construction that flows from the examples given in the specification (as proposed by Maxell) is the proper construction.

(2) Defendants’ proposed structure is too narrow.

A second problem pervades Defendants’ proposal: the suggested corresponding structure excludes other optical elements described in the specification as performing the alleged function. Because Defendants’ proposed structure is too narrow to capture the breadth of embodiments disclosed in the specification, it should be rejected.

The specification describes the “optical units” as an assembly of lenses, mirrors, and/or other optical elements. It confirms that a person of ordinary skill in the art would understand a “projection optical unit” to include different optical elements (*e.g.*, lenses and mirrors). *Id.* at 1:46-53, 3:11-48. The specification does not specifically require “lenses” to enlarge an image; any type of optic element with the appropriate properties can do so. *See id.*

While Maxell’s construction properly captures the flexibility described in the specification, Defendants’ proposal would exclude disclosed embodiments, such as “projection optical units” that include optical elements other than lenses. This is reason enough to reject Defendants’ proposal and adopt Maxell’s. *See G+ Commc'ns, LLC v. Samsung Elecs. Co.*, No. 2:22-CV-00078-JRG, 2023 WL 4534366, at *12 n.5 (E.D. Tex. July 13, 2023) (“When multiple embodiments in the specification correspond to the claimed function, proper application of § 112, ¶ 6 generally reads the claim element to embrace each of those embodiments.” (quoting *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1263-64 (Fed. Cir. 1999))).

Therefore, Defendants’ overly narrow structure should be rejected, and the Court should adopt “an assembly of lenses, mirrors, and/or other optical elements to form an enlarged image” as the plain-meaning construction for these terms.

B. The ’580 Patent

1. Background of the ’580 Patent

The ’580 Patent, which claims priority to February 5, 2010, is directed to solving the problem of a diminishing lifetime of high-pressure mercury lamps when used as the light source

device. *See, e.g.*, '580 Patent at 2:17-23. Around the time of the invention of the '580 Patent, conventional projectors substituted solid-state light sources for mercury lamps, but these devices lacked a point-like light source of white color light with the necessary amount of intensity. *Id.* at 2:44-61. This made devices at the time ill-suited to users' needs.

With these shortcomings in mind, the inventors of the '580 Patent set out to solve this problem. The result of these efforts, disclosed in the '580 Patent, improves over conventional devices by detailing a projection-type display apparatus with a solid-state light source (*e.g.*, LEDs and lasers) capable of generating sufficient power to prevent performance deterioration (*e.g.*, white-balance and/or color shading). *Id.* Conventional devices failed because they employed "a large number" of light sources "within a relatively large area," which could not build up a point-like light source of white color light having a necessary amount or intensity of lights. *Id.* at 2:46-55. Thus, the '580 Patent's inventors developed a system using nearly point-like solid state light sources having sufficient power to resolve these issues. *Id.* at Abstract, 2:44-61.

2. Level of Ordinary Skill in the Art for the '580 Patent

A person of ordinary skill in the art at the time the '580 Patent was filed would have had a Bachelor of Science degree in Electrical Engineering, Physics, Optics, or an equivalent degree, and at least one year of experience working in the field of optical engineering, optical design, or a related field. Additional education and/or experience may provide a substitute for one of the qualifications of a person of ordinary skill in the art.

3. Disputed Terms in the '580 Patent

a) "light separation optic system"

Maxell's Proposed Construction	Defendants' Proposed Construction
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<p>Plain and ordinary meaning, for example, collection of one or more optic units configured to separate light into different colors.</p>	<p>Governed by pre-AIA 35 U.S.C. § 112, ¶ 6</p> <p><u>Function</u>: to separate white light from a light source configured to emit white lights including a light emitting from a fluorescent substance into blue-color light, green-color light, and red-color light</p> <p><u>Structure</u>: two (2) dichroic mirrors and one (1) reflection mirror statically oriented and positioned relative to each other as shown in Fig. 1, wherein dichroic mirror 31 reflects the blue light and transmits the green light and the red light, dichroic mirror 32 receives the separated light from dichroic mirror 31 and reflects the green light and transmits the red light, and reflection mirror 33 reflects the blue light reflected by dichroic mirror 31</p>
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The parties dispute whether “light separation optic system” is a means-plus-function term. Because the term connotes sufficient structure to a person of ordinary skill, “light separation optic system” should be given its plain and ordinary meaning: “a collection of one or more optic units configured to separate light into different colors.”

(1) “Light separation optic system” is not a means-plus-function term.

As the first part of the two-step means-plus-function inquiry, the court must “determine if the claim limitation is drafted in means-plus-function format.” *See MTD Prods.*, 933 F.3d at 1344. The lack of *means* in in this term establishes that there is no presumption that “light separation optic system” is subject to means-plus-function interpretation. *See Williamson*, 792 F.3d at 1348. Defendants cannot overcome this presumption because a person of ordinary skill in the art would understand “light separation optic system” to describe a specific class of structures, such as a collection of one or more optical components configured to separate light into different colors.

Courts have found “optic system” or substantially similar terms to connote sufficiently definite structure to a person of ordinary skill in the art. *See Align Tech., Inc. v. 3Shape A/S*, No. 17-1648-LPS, 2021 WL 2320139, at *9-10 (D. Del. June 7, 2021) (“optical system” “connote[s] sufficient structure to a person of ordinary skill in the art” and is not a means-plus-function term); *Magna Elecs., Inc. v. TRW Auto. Holdings Corp.*, No. 1:12-CV-654, 2015 WL 11401855, at *4

(W.D. Mich. Apr. 28, 2015) (“Optical system: Not a mean-plus-function claim under 35 U.S.C. § 112 ¶ 6. No construction needed.”); *Nikon Corp. v. ASM Lithography B.V.*, 308 F. Supp. 2d 1039, 1069 (N.D. Cal. 2004) (stating that “illumination optical system” was not subject to § 112, ¶ 6 because the term has “pre-established structural meaning” and is “well-understood to be a collection of mirrors, lenses, prisms, and the like configured to reflect, disperse, and otherwise act on light”). The addition of “light separation” to “optic system” is an additional “adjectival qualification[], which further identify sufficient structure to perform the claimed functions to one of ordinary skill in the art.” *See Blitzsafe Texas, LLC v. Subaru Corp.*, No. 2:17-CV-00421, 2018 WL 6504174, at *24 (E.D. Tex. Dec. 11, 2018). *System* is plainly not a nonce word.

The claims themselves also connote structure, as “light separation optic system” is part of a projection-type display apparatus, and the claims describe its operation (separate light), in terms of its input (light) and output (colors). *See Free Stream Media Corp. v. Alphonso Inc.*, No. 2:15-CV-1725, 2017 WL 1165578, at *25 (E.D. Tex. Mar. 29, 2017) (declining to construe “client device” as a means-plus-function term because “the claims themselves connote sufficiently definite structure by describing how the ‘client device’ operates within the claimed invention to achieve its objectives”); *see also Intell. Ventures II LLC v. BITCO Gen. Ins. Corp.*, No. 6:15-CV-59, 2016 WL 125594, at *8 (E.D. Tex. Jan. 11, 2016) (“Structure may also be provided by describing the claim limitation’s operation, such as its input, output, or connections.” (quoting *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014), *overruled on other grounds by Williamson*, 792 F.3d at 1349)).

The specification also indicates that “light separation optic system” is understood as having a particular structure. *See, e.g.*, ’580 Patent at Fig. 1 (labeling light separation optic system 30 as structure within a projection-type liquid crystal display apparatus), 5:31-35 (describing “light separation optic system” as including two sets of dichroic mirrors and a reflection mirror).

The term “light separation optic system” should be given its plain and ordinary meaning.

(2) Defendants’ proposed structure is overly narrow.

As with their proposal for the “projection optical unit” terms for the ’988 Patent, Defendants’ suggested construction for “light separation optic system” is also problematic because it fails to account for all of the disclosed structure in the specification. While Maxell’s proposed construction (a collection of one or more optic units) encompasses all of structural elements necessary to perform the claimed function of separating light, Defendants’ structure incorporates a number of features that are unnecessary to perform the claimed function. This is improper. *Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1352 (Fed. Cir. 2003) (“A court may not import into the claim features that are unnecessary to perform the claimed function.”).

For example, Defendants’ proposed corresponding structure injects a number of features not required to perform the light separation operations called for by the claims, such as “two ... dichroic mirrors” and a “reflection mirror” that is “oriented and positioned” exactly as shown in Figure 1 of the patent. *See* Dkt. 74 at 4-5. Section 112, ¶ 6, does not demand this level of specificity, and Defendants’ structure recites a specific number and type of optic elements, along with specific orientation and positioning of those elements, that are unnecessary to perform the claimed function—separating light into different colors. Defendants’ proposal also requires a first dichroic mirror to reflect blue light and transmit green light and red light, a second dichroic mirror to receive separated light from the first dichroic mirror and to reflect green light and transmit red light, and a third (reflection) mirror to reflect blue light reflected by dichroic mirror.

None of the features beyond a “collection of one or more optic units configured to separate light into different colors” is required, and “§ 112 does not permit ‘incorporation of structure from the written description beyond that necessary to perform the claimed function.’” *See Maxell, Ltd. v. Huawei Device USA Inc.*, 297 F. Supp. 3d 668, 680 (E.D. Tex. 2018) (quoting *Micro Chem.*,

194 F.3d at 1258). Defendants’ hyper-specific positioning, orientation, and number of optic elements is unnecessary to separate light into colors; one optic element alone can do this. ’580 Patent at 5:31-35.

Defendants are plainly using § 112, ¶ 6, to unduly limit the claims. They seek to inject not just limitations from the specification—which itself would be improper—but entire embodiments. Section 112, ¶ 6, however, cannot be used in this manner. *See id.* (holding it to be improper to incorporate unnecessary structure from the specification).

Therefore, Defendants’ restrictive structure should be rejected, and “light separation optic system” should be construed to have its plain and ordinary meaning: “collection of one or more optic units configured to separate light into different colors.”

b) “light modulation means”

Maxell’s Proposed Construction	Defendants’ Proposed Construction
<p>Governed by pre-AIA 35 U.S.C. § 112, ¶ 6</p> <p><u>Function</u>: making light-modulation on a respective one of the lights of the R, G and B separated, depending on a video signal</p> <p><u>Structure</u>: image display element such as a liquid crystal panel or a digital mirror device, and equivalents thereof</p>	<p>Governed by pre-AIA 35 U.S.C. § 112, ¶ 6</p> <p><u>Function</u>: to change the intensity of each of the separated blue-color light, green-color light, and red-color light</p> <p><u>Structure</u>: a set of three panels, one for each separated color light, each of which is a transmission-type liquid crystal panel, a reflection-type liquid crystal panel, or a digital mirror device made by aligning plural number of micro-mirrors</p>

While the parties agree that “light modulation means” is a means-plus-function term, they disagree on both the function and structure. Defendants’ proposed construction has two problems. First, Defendants’ function improperly imports language from the specification, rather than using the claim language. Second, Defendants wrongly articulate the corresponding structure from a single exemplary embodiment to the exclusion of others. Maxell addresses each in turn.

While Defendants seek to rewrite the stated function of the “light modulation means”—“to

make light-modulation on a respective one of the lights of the R, G and B separated, depending on a video signal”—Maxell adheres to the claim language itself. Only the latter approach is proper: when interpreting means-plus-function terms, the claims dictate the function—not the specification. *See Wenger Mfg. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001) (holding it improper to “import functional limitations that are not recited in the claim”); *Mass Eng’d Design, Inc. v. Ergotron, Inc.*, 559 F. Supp. 2d 740, 747-48 (E.D. Tex. 2008) (“Defendants insert limitations not cited in the claim, which is improper.”).

Specifically, Defendants replace the claims’ use of “light-modulation” with “chang[ing] the light intensity”—words found nowhere in the claim. *See* ’580 Patent at cls. 1, 10, 19, 32. Because Maxell’s proposed function faithfully follows the claim language, it should be adopted.

Defendants’ requested structure is also improper. The specification plainly links the function of light modulation depending on a video signal to “transmission-type liquid crystal panels, or reflection-type liquid crystal panels, or digital mirror devices (DMD).” *See id.* at 3:42-49. The specification places no other limits on the corresponding structure.

Defendants, however, submit too narrow a construction by requiring a set of three panels, one for each separated color light. But, while a three-paneled configuration appears as one disclosed embodiment, the specification plainly provides that “the present invention should not be limited to this.” ’580 Patent at 7:41-48. There is no reason to narrow the term to a specific embodiment, especially when the ’580 Patent expressly contradicts such narrowing. *See Northrop Grumman*, 325 F.3d at 1352.

Only Maxell’s proposal captures the proper scope of the term’s function and structure. Thus, this Court should reject Defendants’ proposal and adopt Maxell’s.

c) “separation mirror”

Maxell's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning, for example, a part designed to pass and/or reflect different characteristics of lights in a projector.	Governed by pre-AIA 35 U.S.C. § 112, ¶ 6 <u>Function</u> : to transmit excitation light from a solid-state light emitting element and to reflect light from the fluorescent substance <u>Structure</u> : none disclosed

The dispute for this term exposes another example of Defendants' overzealous application of § 112, ¶ 6, to import limitations into the claims. Here, Defendants contend that "separation mirror" should be subject to means-plus-function interpretation, and, apparently unable to find any corresponding structure in the '580 Patent for a "mirror," Defendants conclude that the term is indefinite. Neither part of this argument has merit.

(1) Section 112, ¶ 6, does not apply.

As recited in claim 10, the term "separation mirror" connotes a definite structure: a mirror. Although the "separation mirror" is "configured to pass said excitation light therethrough, as well as, to reflect the light from said fluorescent substance," '580 Patent at cl. 10, the "separation mirror" is not purely functional. No mirror is. And "separation mirror" is far afield from the sort of "purely functional placeholder in which structure is filled in by the specification." *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1311 (Fed. Cir. 2005) (en banc).

Rather, "separation mirror" refers to a well-defined structure that allows excitation light to pass through while also reflecting the light from the fluorescent substance. As apparent both from the plain use of the structural term "mirror" and from the features of the mirror as described in the specification, a person of ordinary skill in the art would plainly understand "separation mirror" to refer to sufficiently definite structure. Thus, § 112, ¶ 6, does not apply.

(2) Plain and ordinary meaning applies.

Maxell's proposed construction ("a part designed to pass and/or reflect different

characteristics of lights in a projector”) aligns with the claim language and specification. *See Unitherm Food Sys., Inc. v. Swift–Eckrich, Inc.*, 375 F.3d 1341, 1351 (Fed. Cir. 2004) (holding the proper definition is the “definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record”). As claims 10 and 29 indicate, a form of light (*e.g.*, excitation light) passes through the “separation mirror” while another form of light (*e.g.*, light from fluorescent material) is reflected from the “separation mirror.”

Other references use “separation mirror” consistent with Maxell’s plain-meaning proposal. For example, in another patent in the field of optics, “separation mirror” is described “a part designed to pass and/or reflect different characteristics of lights in a projector.” *See, e.g.*, Ex. 1 (U.S. Pat. No. 8,780,947) at cl. 12.

Defendants’ argument that the “separation mirror” is governed by § 112, ¶ 6, should also be rejected. A mirror is plainly a structure, and this term should be given its plain and ordinary meaning—for example, a component designed to pass and/or reflect different characteristics of light in a projector.

d) “light flux capturing means”

Maxell’s Proposed Construction	Defendants’ Proposed Construction
Governed by pre-AIA 35 U.S.C. § 112, ¶ 6 <u>Function</u> : capturing light flux <u>Structure</u> : a lens, a mirror, or a combination of lenses and/or mirrors that captures at least some portion of light, and equivalents thereof	Governed by pre-AIA 35 U.S.C. § 112, ¶ 6 <u>Function</u> : to direct white light emitted from the light source <u>Structure</u> : a reflection surface, such as a mirror, having a focus point

The parties agree that “light flux capturing means” is a means-plus-function term, but they disagree on both the function and structure. Maxell’s proposed function follows the claim language, while Defendants once again rewrite this language to suit their litigation goals. Maxell’s expression of the structure incorporates the full scope described in the written description, whereas

Defendants ignore several examples noted in the specification for performing the claimed function.

Maxell's proposed function ("capturing light flux") flows from the claim language itself. For instance, claim 7 recites, "white lights are lights, which are captured by a light flux capturing means made up with a reflection surface having a focus point." '580 Patent at cl. 7. The term's function is plainly understood as capturing light flux—just as Maxell proposes. *See LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1379 (Fed. Cir. 2006) ("Because the recited function is clear on its face, it was improper to incorporate [an] additional functional limitation").

In contrast, Defendants' proposed function ("to direct white light ...") fails to stay faithful to the claim language and should be rejected for this reason alone. *See Wenger*, 239 F.3d at 1233 (holding it improper to "import functional limitations that are not recited in the claim"). Additionally, Defendants' proposal construes the function of "light flux capturing means" as "to direct white light emitted from the light source." But this interpretation invents a requirement that the "light source" emits white light where none of the claims mention this in connection with the "light flux capturing means." Because Defendants improperly derive their construction from the specification, it should be rejected. *See id.*

Regarding structure, Maxell's proposed construction flows from the specification and includes the full scope of disclosed structures, whereas Defendants' proposed construction excludes examples for performing the recited function. This too is improper. *See Red Rock Analytics, LLC v. Samsung Elecs. Co.*, No. 2:17-CV-101-RWS-RSP, 2018 WL 1806859, at *22 (E.D. Tex. Apr. 16, 2018) ("When multiple embodiments in the specification correspond to the claimed function, proper application of § 112, ¶ 6 generally reads the claim element to embrace each of those embodiments." (quoting *Micro Chem.*, 194 F.3d at 1258)).

The '580 Patent discloses the use of two mirrors (*e.g.*, a separation mirror and a reflection mirror) to capture light flux. '580 Patent at 7:57-8:11, 8:37-65. Defendants' proposal ("a reflection

surface, such as a mirror, having a focus point”) ignores this mirror combination and further excludes additional structures implicit in the specification. While “a reflection surface” may be sufficient to capture light flux, it is not the only structure capable of doing so. For instance, a person of ordinary skill in the art would understand a “lens system” could also capture light flux. *See Ex. 2 (Chambers Dictionary of Science and Technology* (3d ed. 2007)) at 697 (defining “light flux” as “[t]he measure of the quantity of light passing through an area, *e.g.*, through a lens system” (emphasis added)).

Further, “disclosure of corresponding structure need not be express” because it “may be implicit in the written description if it would have been clear to those skilled in the art.” *Orange Elec. Co. v. Autel Intelligent Tech., Ltd.*, No. 2:21-CV-00240-JRG, 2023 WL 300137, at *6 (E.D. Tex. Jan. 18, 2023) (citing *In re Dossel*, 115 F.3d 942, 946 (Fed. Cir. 1997)). Defendant’s proposal, therefore, is improper because it excludes implicit structures that would have been clear to those skilled in the art. *See id.*

Thus, the Court should adopt Maxell’s construction, which includes all of the disclosed structures and equivalents thereof (*e.g.*, a lens, a mirror, or a combination of both).

C. The ’226 Patent

1. Background of the ’226 Patent

The ’226 Patent, with a priority date of November 1, 2012, addresses challenges associated with projection-type image display devices by introducing a light source device designed to improve the efficiency and lifespan of fluorescent materials. At the time, such devices concentrated excitation light on a small area of fluorescent material, leading to deterioration, reduced efficiency, and shortened lifespans of the fluorescent material, and consequently the lifespans of the light source device. *See* ’226 Patent at 1:34-38. Figures 6(A), 6(B), and 6(C) of the ’226 Patent illustrate these issues, showing how concentrated light resulted in uneven luminance distribution, excessive

heat in the center of the irradiation region, and decreased material performance.

To solve these problems, the inventors of the '226 Patent redesigned the optical components to optimize the distribution of excitation light on the fluorescent material. By increasing the irradiation region and creating a more uniform luminance distribution, as depicted in Figs. 1(B) and 1(C), the temperature of the fluorescent material is lowered. *See id.* at 2:66-3:9. This innovation not only improves light-emitting efficiency but also extends the lifespan of the fluorescent material and the overall light source device. *See id.* at 3:4-6, 3:60-4:23.

2. Level of Ordinary Skill in the Art for the '226 Patent

A person of ordinary skill in the art at the time the '226 Patent was filed would have had a Bachelor of Science degree in Electrical Engineering, Physics, Optics or an equivalent degree, and at least one year of experience working in the field of optical engineering, optical design, or a related field. Additional education and/or experience may provide a substitute for one of the qualifications of a person of ordinary skill in the art.

3. Disputed Terms in the '226 Patent

a) “an emission side of the excitation light relative to the fluorescent material”

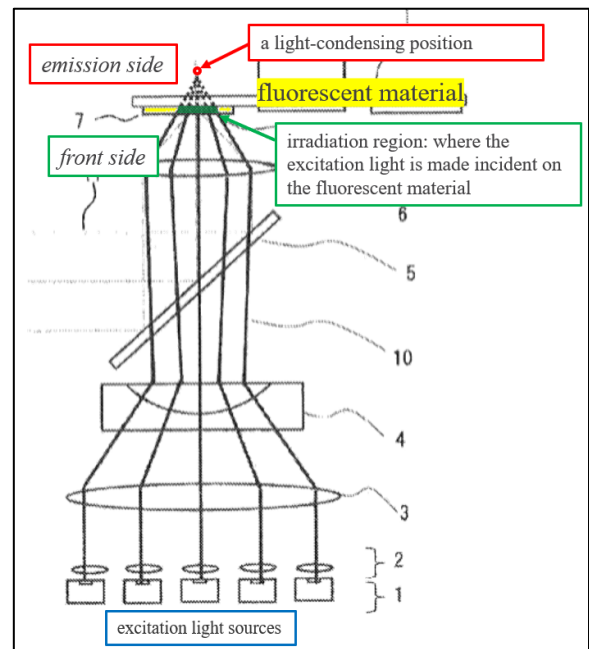
Maxell's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning, for example, an excitation light's exit side of the fluorescent material that faces away from the excitation light source.	If the Court determines that this term is amenable to construction, then Coretronic and Optoma propose: The surface of the fluorescent material on the side facing the excitation light source.

(1) The term is not indefinite.

According to Dr. Lebby, a person of ordinary skill in the art reading the claim, in light of the specification and prosecution history, would understand the scope of the claimed subject matter with reasonable certainty. *See* Ex. 3 (Lebby Decl.) at ¶ 49.

The '226 Patent “intends to ‘improve the light-emitting efficiency and service life of the fluorescent material’ by adjusting distribution of the light incident on the fluorescent material—to avoid having the sharp focus that leads to excessive heat on the fluorescent material that causes shortened service life.” *Id.* ¶ 50 (citing '226 Patent at 1:39-43, 3:64-4:5). A person of ordinary skill in the art reading the claim in view of the specification would understand that this goal of avoiding sharp focus is achieved by placing the light-condensing position on “an emission side of the excitation light relative to the fluorescent material” “to establish the dispersed distribution of the light to the fluorescent material.” *Id.*

A person of ordinary skill in the art examining Figures 1-4 “would note that, in all four figures, the light-condensing position is located on ‘the excitation light’s exit side of the fluorescent material that faces away from the excitation light source.’” *Id.* The “front side” and the “emission side” are used to indicate two different sides of the fluorescent material. *Id.* at ¶ 52 (citing '226 Patent at 3:45-59). The front side is where the excitation light “that has passed through the condenser lens is made incident on the fluorescent material.” *Id.* at ¶ 53 (citing '226 Patent at 3:45-47). The emission side is where “the light-condensing position is positioned ... relative to the fluorescent material 7.” *Id.* (citing '226 Patent at 3:48-51). Dr. Lebbly’s annotated Figure 1(A) (reproduced to the right) show these two sides of the fluorescent material in relation to the excitation light sources.



Ex. 3 (Lebbly Decl.) at ¶ 53 (citing Fig. 1(A) (annotations added))

Defendants contend that “an emission side of the excitation light relative to the fluorescent material” and the “a front side of fluorescent material” should have the same meaning as “the

surface of the fluorescent material on the side facing the excitation light source.” *See* Dkt. 74 at 10, 13 (emphasis added). Not only would this construction be inconsistent with the specification and how a person of ordinary skill in the art would understand the terms (as Dr. Lebby explains), the Federal Circuit has repeatedly instructed that “different claim terms are presumed to have different meanings.” *MicroStrategy Inc. v. Bus. Objects Ams.*, 238 F. App’x 605, 609 (Fed. Cir. 2007) (citing *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.”)). Defendants’ attempt to construe separate terms to have the same meaning only creates confusion. That approach should be rejected.

“Emission side” is well-defined in the specification and has an established meaning in optical systems. As Dr. Lebby notes, “light has a definable propagation direction that can both be measured and verified” and “emission side” refers to “an objectively determinable feature of the system that establishes an objective and measurable relationship between the light and the components of a projection-type image display device.” Ex. 3 (Lebby Decl.) at ¶ 55. Further, “the term ‘emission side’ is widely used in the field of optics and photonics, as in the ’226 Patent, to describe the direction in which light exits a medium, system, or material.” *Id.* at ¶ 58.

The phrase “relative to the fluorescent material” defines the emission side in relation to fixed, well-known components of the system to show that the light-condensing position is on the emission side of the excitation light of the fluorescent material. ’226 Patent at 2:30–54; *see also id.* at ¶ 59 (citing ’226 Patent at 3:49-51, Fig. 1(A)). Dr. Lebby illustrates how the “condensing position” is located relative to the fluorescent material in his annotated figures. *Id.*

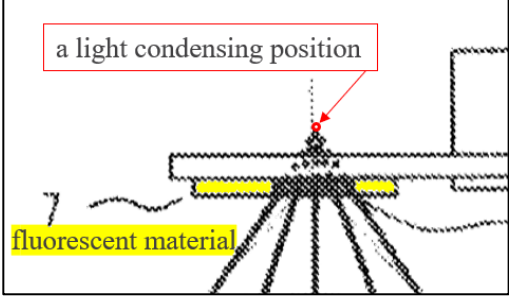
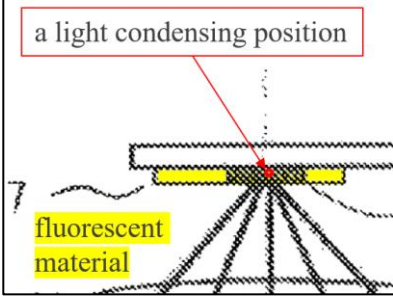
The use of term “relative to” in this phrase is also consistent with its plain and ordinary meaning: “in terms of a connection to.” *See* Ex. 4 (*New Oxford American Dictionary* (3d ed. 2010)) at 1473. This is because the position of emission side will change with arrangements of the

fluorescent material and other parts of the system. Nevertheless, a person of ordinary skill would understand the scope of the claim with reasonable certainty, as Dr. Lebby concluded.

(2) Maxell’s proposed construction should be adopted.

As shown in Figures 1–4 of the ’226 Patent, the light-condensing position is on “an excitation light’s exit side of the fluorescent material that faces away from the excitation light source.” *See* Ex. 3 (Lebby Decl.) at ¶ 64. Dr. Lebby testified that the difference between conventional light source devices, illustrated in Figure 6(A), and the claimed invention is that “the light-condensing position was embedded within the fluorescent material” whereas in the claimed invention, “uniform luminance distribution slightly defocused” on the fluorescent material. *Id.* (citing ’226 patent at Figs. 1-4, 6(A)).

The placement of the light-condensing position on the emission side of the fluorescent material also aligns with how the rays “are substantially scattered evenly, thereby consequently forming a substantially uniform luminance distribution slightly defocused” on the fluorescent material. *Id.* at ¶ 67 (citing ’226 Patent at 3:64-4:1, comparing Figs. 6(B) and 6(C) with Figs. 1(B) and 1(C)). As Dr. Lebby notes, a person of ordinary skill in the art would understand that to ensure the excitation light reaches the fluorescent material without concentrating on one area, the light-condensing position is placed on the “side of the fluorescent material that faces away from the excitation light source.” *Id.*

Exemplary Embodiments of the Invention	Conventional Light Source Device
 <p>The diagram shows a cross-section of a device. A yellow rectangular area at the bottom is labeled 'fluorescent material'. Above it, a red dot is labeled 'a light condensing position'. Dashed lines represent light rays originating from the condensing position and spreading downwards through the fluorescent material. A bracket on the left side of the fluorescent material is labeled '7'.</p> <p>Fig. 1(A) (annotation added)</p>	 <p>The diagram shows a cross-section of a device. A yellow rectangular area at the bottom is labeled 'fluorescent material'. Above it, a red dot is labeled 'a light condensing position'. Dashed lines represent light rays originating from the condensing position and spreading downwards through the fluorescent material. A bracket on the left side of the fluorescent material is labeled '7'.</p> <p>Fig. 6(A) (annotation added)</p>

(3) Defendants’ alternative proposed construction contradicts the specification.

Defendants’ proposed construction also places the condensing position on the opposite side of the fluorescent material than the one that is found in the ’226 Patent’s figures, where “no such condensing of light that happens on the side of the ‘fluorescent material that faces the excitation light source.’” Ex. 3 (Lebby Decl.) at ¶ 72 (citing Fig. 1(A)). Thus, Defendants’ proposed construction that the light-condensing position be located on “the surface of the fluorescent material on the side facing the excitation light source” excludes an embodiment disclosed in the ’226 Patent and thus cannot be correct. *See Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1277 (Fed. Cir. 2008) (“[W]here claims can reasonably [be] interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment”).

Defendants’ proposed construction appears to be based on Figure 6, but as Dr. Lebby testified, “claim 8 doesn’t read on the conventional setup” in Figure 6 because the ’226 Patent “teaches an improvement over the conventional light source device setup as indicated in Figure 6.” Ex. 5 (Lebby Tr.) at 37:25-38:15, 38:25-39:18 (emphasis added). He also noted, “the light-condensing position has changed from Figure 6, which is the conventional art, to a new design,” in Figures 1-4 that the ’226 Patent teaches, so “the fluorescent material is actually going to be more reliable.” *Id.* at 41:7-42:7; *see also* Ex. 3 (Lebby Decl.) at ¶ 65.

Accordingly, Maxell’s proposed construction should be adopted.

- b) “the optical member has a curvature that is set such that a light-condensing position of the excitation light is positioned on an emission side of the excitation light relative to the fluorescent material”***

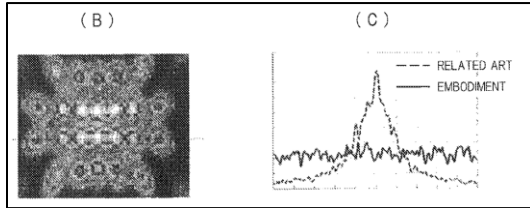
Maxell's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning, for example, the optical member has a curvature that causes a light-condensing position of the excitation light to be positioned on an excitation light's exit side of the fluorescent material that faces away from the excitation light source.	If the Court determines that this term is amenable to construction, then Coretronic and Optoma propose that "a light-condensing position" be construed to mean: An illumination region formed by converging light rays

First, the parties disagree as to which phrase needs construction. Maxell believes the phrase should be construed as a whole—as Defendants originally proposed in their P.R. 4-1 disclosures—for greater clarity in scope of the claim. Defendants now focus on the phrase "a light-condensing position" and contend it to mean "an illumination region formed by converging light rays."

The term "a light-condensing position" needs no further construction. A person of ordinary skill in the art would understand that "a light-condensing position" is where the light rays converge into a single point—not a "region," as Defendants propose. *See* '226 Patent at Figs. 1(A), 2(A), 3(A), 4(A). Because the patent teaches that "a light-condensing position is positioned on the emission side of the excitation light," *id.* at cl. 8, 3:49-50, a person of ordinary skill in the art would recognize that the claimed position is the point where the light condenses, as shown in Figure 1(A).

Defendants' puzzling proposal injects unnecessary uncertainty to an otherwise clear claim. There is no need to rephrase this well-understood term, and Defendants' proposed construction replaces "position" with "region." Doing so creates confusion by making ambiguous how far this "region" extends. It is likewise unclear how converging rays (lines) can create an entire "region" rather than a single point. Although the specification plainly distinguishes between "irradiation region" and "light-condensing position," construing the "light-condensing position" as another "region" will make it more challenging to discern the differences between these distinct terms.

For example, Figures 1(B) and 1(C) “show an irradiation region 8 of the excitation light 10 on the fluorescent material 7, FIG. 1(B) is a two-dimensional distribution drawing of excitation light, and FIG. 1(C) shows a luminance distribution on one cross-section,” *id.* at 3:60-64, which



'226 Patent at Figs. 1(B), 1(C)

cannot not be located on the emission side. If a light-condensing position were to become another region, a person of ordinary skill in the art would no longer have clarity as to where and how far a light

condensing position will extend relative to the fluorescent material. Claims should be construed to preserve their validity, and construing a phrase that would confuse more than clarify cannot be correct. *See ClearOne, Inc. v. Shure Acquisition Holdings, Inc.*, 35 F.4th 1345, 1351 (Fed. Cir. 2022) (finding that a term is not indefinite merely because it has multiple plausible interpretations, as this would make nearly every claim term indefinite).

Maxell incorporates its analysis and reasoning in Section III.C.3.a) to support its proposed construction herein. The whole phrase should be construed, and Maxell’s proposed construction should be adopted.

c) “a front side of the fluorescent material”¹

Maxell’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, for example, the surface of the fluorescent material on the side facing the excitation light source	If the Court determines that this term is amenable to construction, then Coretronic and Optoma propose that “a front side of the fluorescent material” be construed to mean: The surface of the fluorescent material on the side facing the excitation light source.

As used in dependent claim 10, the “front side of the fluorescent material” is the side where

¹ Maxell agrees with Defendants that the shorter phrase is all that requires construction. *See* Dkt. 74 at 13 n.3.

light from the excitation light source comes into contact with the fluorescent material. This is shown in Dr. Lebby's annotated Figure 1(A) (reproduced above) and confirmed by the written description. *See* '226 Patent at 3:45-51 ("[T]he excitation light 10 that has passed through the condenser lens 6 is made incident on the fluorescent material 7 at the front side of the fluorescent material as a light-condensing position (such that the light-condensing position is positioned on the emission side of the excitation light 10 relative to the fluorescent material 7).").

Defendants appear to agree on this point. *See* Dkt. 74 at 13. Accordingly, to reduce the number of disputes, Maxell agrees with Defendants' alternative proposal for the "front side" term: "the surface of the fluorescent material on the side facing the excitation light source."²

D. The '388 Patent

1. Background of the '388 Patent

The '388 Patent has a priority date of April 3, 2013, and is directed to improving visibility in video. '388 Patent at Abstract. The '388 Patent teaches that changing properties captured in video signals, like luminance and color, can help improve video quality. *Id.* at 1:34-41. For example, adjusting contrast can provide better visibility of certain objects. *Id.* at 1:38-41.

However, conventional methods during the time of the '388 Patent did not properly account for the dynamic nature of videos. *Id.* at 1:42-48. For example, one scene in a video may require a first type of adjustment, and the next scene might require a different type of adjustment. *Id.* Then-existing methods did not account for differences in light-reflection properties and their contribution to the video when applying dynamic range compression. *Id.* at 1:4-54.

To solve this problem, the '388 Patent describes a system in which a set of processing units

² Maxell disputes that this term is indefinite and will address Defendants' arguments on that point in reply. Thus far, Defendants have provided no basis for why they believe this term is indefinite. Maxell's cites to the specification here show that a person of ordinary skill would understand its scope with reasonable certainty.

perform a series of specialized Retinex processes³ on video. *Id.* at Abstract. In this way, visibility of objects in videos may be increased and video quality may be improved. *Id.* at 2:8-9.

2. Level of Ordinary Skill in the Art for the '388 Patent

A person of ordinary skill in the art at the time the '388 Patent was filed would have had a Bachelor of Science degree in Electrical Engineering, Physics, Optics, or an equivalent degree, and at least one year of experience working in the field of image processing or a related field. Additional education and/or experience may provide a substitute for one of the qualifications of a person of ordinary skill in the art.

3. Disputed Terms in the '388 Patent

a) “Retinex processing unit”

Maxell’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, for example, one or more processors that are capable of executing a Retinex process or one or more processors that are capable of executing a processing to control definition of a video and/or to control visibility of a video.	Governed by 35 U.S.C. § 112(f) <u>Function</u> : perform a Retinex process <u>Structure</u> : none disclosed

The parties disagree on two aspects of this term. First, the parties dispute whether “Retinex processing unit” should be interpreted as a means-plus-function term. Second, and stemming from the first inquiry, the parties dispute whether the '388 Patent links the claimed function with corresponding structure in the patent for performing that function.

Defendants yet again mistakenly shoehorn a familiar structural term (“processing unit”)

³ Retinex processes are based on Retinex theory, which the '388 Patent describes as “a theory on a visual property of human eyes such as color constancy and brightness constancy. Based on the theory, an illumination light component can be separated from the video, and a reflected light component can be extracted.” *Id.* at 3:66-4:3. By performing the video correction process based on a Retinex theory, “a high visibility video can be obtained even for a video in a dark room or under a bright backlight.” *Id.* at 4:4-6. Retinex processing aims to negate the impact of an illumination light component that makes it difficult to see objects in a video. *Id.*

into the purview of § 112(f) in order to manufacture an invalidity argument. Section 112(f) should not apply to this term, and, regardless, the '388 Patent provides ample disclosure of its structure and operation to satisfy the definiteness requirement. Defendants' arguments should be rejected.

(1) “Retinex processing unit” is not a means-plus-function limitation.

The term “Retinex processing unit” should not be interpreted as a means-plus-function limitation. The lack of the word *means* in this claim term creates a presumption against Defendants' interpretation. *See Williamson*, 792 F.3d at 1348. Defendants cannot overcome this presumption: a person of ordinary skill in the art would understand “Retinex processing unit” to describe a specific class of structures, such as one or more processors.

The legal authority is in accord. Courts have found similar “unit” terms to connote a known class of structures, such as processors. *See Samsung Elecs. Am., Inc. v. Prisia Eng'g Corp.*, 948 F.3d 1342, 1354 (Fed. Cir. 2020) (finding “digital processing unit” sufficiently denoted structure and did not invoke means-plus-function claiming); *Gesture Tech. Partners, LLC v. Huawei Device Co.*, No. 2:21-CV-40, 2021 WL 4760632, at *39-40 (E.D. Tex. Oct. 12, 2021) (rejecting that the term “processing unit” is a means-plus-function term in multiple patents, and finding “although ‘processing unit’ may refer to a broad class of structures, this breadth does not necessarily render the term non-structural”); *Capella Photonics, Inc. v. Fujitsu Network Commc'ns, Inc.*, No. 2:20-CV-00076, 2021 WL 465430, at *24 (E.D. Tex. Feb. 9, 2021) (“[T]he Court understands that ‘processing unit’ refers to a well-known class of structures also known as processors.”); *CXT Sys., Inc. v. Acad., Ltd.*, No. 2:18-CV-00171-RWS-RSP, 2019 WL 4253841, at *11 (E.D. Tex. Sept. 6, 2019) (“[T]he Court understands that the ‘processing module for processing’ of the claims is inherently structural.”).

The same rationale applies here. A “processing unit” as used in these claims refers to a known class of structures—one or more processors. The addition of “Retinex” to “processing unit”

further clarifies the use of processors in executing Retinex operations to control definition or visibility of a video. This is reinforced by the claim language itself: “a [first/second] Retinex processing unit which performs a [first/second] Retinex process on a video input from the video input unit.” The term also finds support in the specification, as outlined in the following subsection.

(2) “Retinex processing unit” is not indefinite.

Building on their mistaken premise that “processing unit” should be subject to means-plus-function treatment, Defendants next argue that no sufficient structure is recited in the specification. Defendants are incorrect about this as well.

The '388 Patent's specification provides ample detail about how the Retinex processing units perform Retinex processing. That detail includes figures, mathematical formulas, and narrative descriptions that go into great detail about this feature. *See, e.g.*, '388 Patent at 1:10-21, 1:58-2:4, 3:60-4:57, 5:4-36, 6:46-58, 7:6-8:42, 11:6-61, 13:59-15:21, Figs. 1, 2, 3, 4A, 4B, 7, 8, 9A, 9B, 13, 14, 15, 17, 18. In one example, the claimed “first Retinex processing unit” includes sub-components that “receive[] the internal video signal 12 as an input signal,” “detect[] two reflected light components 101 and 102 through the video processing based on the Retinex theory,” “receive[] the detected two reflected light components as inputs, which adjusts the reflected light,” and “output[] the correction video signal 13 through the recomposition.” *Id.* at 8:33-42.

The specification thus describes the “inputs, the relationships between those inputs, and the method by which they are to be applied together,” thereby satisfying the requirement for a specific algorithm. *See Cellular Commc'ns Equip. LLC v. HTC Corp.*, No. 6:13-CV-507, 2015 WL 1048890, at *6 (E.D. Tex. Mar. 9, 2015).

Patentees may satisfy the requirements for corresponding structure in a variety of ways, “including through the use of ‘a claim term with a structural definition that is either provided in the specification or generally known in the art,’ or a description of the claim limitation's operation

and ‘how the function is achieved in the context of the invention.’” *Dyfan*, 28 F.4th at 1366. This Court has found structure where “[t]he specification expressly mentions that a variety of [] algorithms may be used” and provides a “listing of specific algorithms.” *See Intelligent Water Sols., LLC v. Kohler Co.*, No. 2:16-CV-689, 2017 WL 2444723, at *7 (E.D. Tex. June 5, 2017).

Here, the ’388 Patent explains that the Retinex processing units execute Retinex processing based on “a combination of Retinex models” and provides examples of specific algorithms (Retinex models) for doing so. *See, e.g.*, ’388 Patent at 4:13-25, 6:53-58. Thus, the ’388 Patent discloses sufficient structure for “Retinex processing unit,” and this term is not indefinite.

b) “video composing unit”

Maxell’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, for example, a portion of one or more processors that composes a video	Governed by 35 U.S.C. § 112(f) <u>Function</u> : compose a video from a video processed by the first Retinex processing unit and a video processed by the second Retinex processing unit in accordance with a feature of the video input from the video input unit <u>Structure</u> : none disclosed

Here again, the parties dispute whether “video composing unit” should be interpreted as a means-plus function term under § 112(f). If “video composing unit” is determined to be a means-plus-function term, the parties further dispute whether the ’388 Patent links the claimed function with corresponding structure in the patent for performing that function.

(1) “Video composing unit” is not a means-plus-function limitation.

The mere use of the word *unit* in this term does not, without more, make “video composing unit” a means-plus-function term. *See Canon*, 2020 WL 2098197, at *31 (finding that “control unit” has “sufficiently definite structure” because “[t]he ‘control’ modifier imparts structural significance to the term, and, as such, ‘control unit’ is structural”).

Here, “video composing” imparts structural significance to the term and denotes sufficiently definite structure by stating how the “video composing unit” operates: it composes a video. *See id.* Thus, a person of ordinary skill in the art would understand “video composing unit” to describe a specific class of structures, such as a portion of one or more processors.

The claims also recite operative features, including specific input (“video processed by the first Retinex processing unit and a video processed by the second Retinex processing unit in accordance with a feature of the video input from a video input unit”), output (a “composed video”), and operation (video composition) of the “video composing unit.” All of this also conveys structure. *See Free Stream Media*, 2017 WL 1165578, at *25 (declining to construe “client device” as a means-plus-function term because “the claims themselves connote sufficiently definite structure by describing how the ‘client device’ operates within the claimed invention to achieve its objectives”); *Intell. Ventures*, 2016 WL 125594, at *8 (“Structure may also be provided by describing the claim limitation's operation, such as its input, output, or connections.”).

The dependent claims further show the definite structure of the video composing unit. For example, dependent claim 5 recites that a process of the “video composing unit” is changed in accordance with a measurement result of an illuminance sensor. This recitation thus “add[s] limitations that either describe particular structural features or flesh[es] out whether the term has a particular structural meaning.” *See Diebold*, 899 F.3d at 1298.

Therefore, the claims connote to a person of ordinary skill in the art a specific class of structures (*e.g.*, a portion of one or more processors). “Video composing unit” is not a means-plus-function term and should be given its plain and ordinary meaning: a portion of one or more processors that composes a video.

(2) “Video composing unit” is not indefinite.

“Video composing unit” should not be found indefinite because the specification provides

sufficient structural descriptions. For example, the specification discloses that the “video composing unit” has a defined role within the context of a video display device, details its interactions with other components, and provides algorithms that convey structure. *See, e.g.*, ’388 Patent at 1:58-2:4, 4:53-65, 6:46-7:64, 12:39-65, Figs. 1-3, 13-15, 17. The ’388 Patent discloses:

FIG. 3 illustrates an example of a configuration of the video composing unit 26. The correction video signal 21 is magnified by “ α ” in a gain controlling unit 27, the correction video signal 23 is magnified by “ $(1-\alpha)$ ” in a gain controlling unit 28, and the both signals are subjected to an addition process in an adder 30, and then, are magnified by “ β ” in a gain controlling unit 31, so that the correction video signal 13 is obtained.

Id. at 4:44-65.

“A description of the function in words may disclose, at least to the satisfaction of one of ordinary skill in the art, enough of an algorithm to provide the necessary structure under § 112, ¶ 6.” *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1386 (Fed. Cir. 2011). Here, the ’388 Patent provides the necessary structure (*i.e.*, a portion of one or more processors) by describing an algorithm for how the “video composing unit” operates. *See* ’388 Patent at Fig. 3, 4:44-65. The specification also explains the role of the “video composing unit” based on its operation and interaction with other components. *See id.* at 4:13-32, 6:53-62. Thus, “video composing unit” sufficiently denotes structure (*i.e.*, a portion of one or more processors) and should not be found indefinite.

IV. CONCLUSION

Maxell respectfully requests that its proposed constructions be adopted.

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who are deemed to have consented to electronic service are being served this 25th day of March, 2025, with a copy of this document via the Court's CM/ECF system.

/s/ Bryan Nese
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